1 Exponentials

	General Base $a > 0$	**Special Case: Base** $e = 2.71828\cdots$
Laws:	$a^b a^c = a^{b+c}$	$e^b e^c = e^{b+c}$
	$\frac{a^b}{a^c} = a^{b-c}$	$\frac{e^b}{e^c} = e^{b-c}$
	$(a^b)^c = a^{bc}$	$(e^b)^c = e^{bc}$
Derivative:	$\frac{d}{dx}[a^x] = a^x \ln(a)$	$\frac{d}{dx}[e^x] = e^x$

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2 Logarithms

Definiton: $\log_a(b)$ is the power to which a is raised to give b.

Definiton: $\ln(b) = \log_e(b)$, the power to which e is raised to give b.

	General Base $a > 0$	**Special Case: Base** $e = 2.71828\cdots$
Laws:	$\log_a(bc) = \log_a(b) + \log_a(c)$	$\ln(bc) = \ln(b) + \ln(c)$
	$\log_a\left(\frac{b}{c}\right) = \log_a(b) - \log_a(c)$	$\ln\left(\frac{b}{c}\right) = \ln(b) - \ln(c)$
	$\log_a(b^c) = c\log_a(b)$	$\ln(b^c) = c\ln(b)$
Change of Base:	$\log_b(c) = \frac{\log_a(c)}{\log_a(b)}$	$\log_b(c) = \frac{\ln(c)}{\ln(b)}$
Derivative:	$\frac{d}{dx}[\log_a(x)] = \frac{1}{x\ln(a)}$	$\frac{d}{dx}[\ln(x)] = \frac{1}{x}$

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3 Inverse Properties

General Base $a > 0$	**Special Case: Base** $e = 2.71828\cdots$
$a^{\log_a(x)} = x$	$e^{\ln(x)} = x$
$\log_a(a^x) = x$	$\ln(e^x) = x$